an insulation layer for blocking the passage of a first carrier and a second carrier having different polarity from the first carrier;

a photoelectric conversion semiconductor layer;

an injection blocking layer for blocking the injection of the first carrier to the photoelectric conversion semiconductor layer;

a second electrode layer; and

a switching means for operating the converter by switching through the following three operation modes a) through c), in that order, to apply an electric field to each layer of the photoelectric conversion element:

a) an idling mode for emitting the second carrier from the photoelectric conversion element;

b) a refresh mode for refreshing the first carrier accumulated in the photoelectric conversion element; and

c) a photoelectric conversion mode for generating pairs of the first carrier and the second carrier in accordance with an amount of incident light to accumulate the first carrier.

2. (Amended) The photoelectric converter according to claim 1, wherein a potential difference V_{dg}[idle] obtained by subtracting the potential of the second electrode layer from the potential of the first electrode layer of the photoelectric conversion element in the idling mode is smaller than a potential difference V_{dg}[read] obtained by subtracting the potential of the second electrode layer from the potential of the first electrode layer of the photoelectric conversion element in the photoelectric conversion mode.

3. (Amended) The photoelectric converter according to claim 1, wherein a recess mode of the photoelectric conversion element is provided for applying a zero electric field to each layer before the idling mode.

5. The method for driving a photoelectric converter according to claim 4, wherein a potential difference V_{dg}[idle] obtained by subtracting the potential of the second electrode layer from the potential of the first electrode layer of the photoelectric conversion element in the idling mode is a positive value ($0<V_{dg}$[idle]$<V_{dg}$[read]) smaller than the potential difference V_{dg}[read] obtained by subtracting the potential of the second electrode layer from

B2

the potential of the first electrode layer of the photoelectric conversion element in the photoelectric conversion mode.

Sub C2

8. (Amended) A system comprising:

a photoelectric converter comprising a photoelectric conversion element of a laminated structure comprising:

a first electrode layer,

an insulation layer for blocking the passage of a first carrier,

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a second carrier having different polarity from the first carrier,

a photoelectric conversion semiconductor layer,

an injection blocking layer for blocking the injection of the first carrier to the photoelectric conversion semiconductor layer,

a second electrode layer,

a switching means is provided for operating the converter by switching through the following three operation modes a) through c), in that order, to apply an electric field to each layer of the photoelectric conversion element:

a) an idling mode for emitting the second carrier from the photoelectric conversion element,

b) a refresh mode for refreshing the first carrier accumulated in the photoelectric conversion element, and

c) a photoelectric conversion mode for generating pairs of the first carrier and the second carrier in accordance with an amount of incident light to accumulate the first carrier;

a signal processing means for processing a signal from the photoelectric converter;

a recording means for recording a signal from the signal processing means;

a display means for displaying a signal from the signal processing means;

an electric transmission means for electrically transmitting a signal from the signal processing means; and

a radiation source for generating radiation.

Please add Claims 9 and 10 as follows:

--9. The photoelectric converter according to claim 2, wherein the potential V_{dg}[idle] is greater than zero.